REMARKS

Applicant respectfully requests reconsideration of the pending claims in view of the amendments.

In summary, amended claim 1 is directed to a method of forming a surface micromachined MEMS device having both circuitry and structure. Among other things, the method deposits a conductive path on an oxide that was applied to a substrate. This conductive path connects between the circuitry and structure. Neither Barron nor Montague (US 5,798,283) teach such a process.

In the amendment dated July 11, 2005, the applicant noted that the "first-level functional elements 20" of Barron where MEMS structure-the endpoints between conductive paths. They are not the conductive paths. Although the latest office action does not agree with that, applicants still respectfully disagree with the office action and maintain that such elements are not conductive paths between circuitry and structure.

Despite that lack of agreement, another distinction in claim 1 also renders it patentable. Specifically, as noted above, the method of forming a surface micromachined MEMS device, as defined by amended claim 1, deposits a conductive path on an oxide, which itself was applied on a substrate. This method facilitates use of an oxide layer having a thickness that is sufficient to mitigate parasitic capacitance. Neither reference teaches such a method. Instead, rather than deposit a conductive path on an oxide, both references deposit polysilicon on a nitride layer.

In particular, as shown in Figure 1 of Montague, its MEMS device has a doped polysilicon 24 on a nitride layer 22. Indeed, this nitride layer 22 is formed on a thin layer of thermal oxide (not shown), but the oxide's purpose is to protect the bare silicon from exposure to the first nitride layer 22 (see column 5, lines 30-35) -not to reduce parasitic capacitance. Accordingly, there is no motivation in the art to use oxide instead of nitride.

Primarily, those in the art understand that nitride typically is a high stress material and thus, applying a thick layer could adversely affect the MEMS device or

render the substrate difficult to process. Specialized processes may reduce the stress of nitride to some extent, but not enough to produce the desired results. Montague thus continues to note that the nitride layer 22 requires a special process to reduce its stress (see column 5, lines 35-38), although it still may be relatively high. Even so, the nitride layer 22 is only about 200-300 nanometers thick, which in many applications, still may not be thick enough to mitigate parasitic capacitance. This is in contrast to oxides, which typically have a low enough stress to deposit (or grow) a relatively large thickness that is sufficient to mitigate parasitic capacitances. The claimed invention therefore requires no specialized processes to reduce the nitride stress and permits relatively thick insulator layers without the requisite stresses.

In a similar manner, Figure 4C of Barron also shows a MEMS device having doped polysilicon 20 on a nitride layer 16. The doped polysilicon 20 is not on an oxide. Again, however, in a manner similar to Montague, a thin thermal oxide (not shown) is formed on the substrate 10 to protect it from contact with the nitride layer 16. Column 7, lines 33-41 nevertheless teaches away from depositing polysilicon directly on the oxide by stating that use of nitride for layer 16 (i.e., to receive the deposited polysilicon) is preferred because it is "substantially harder than an oxide sacrificial material" and is "chemically resistant to the CMP slurry 110 and also to HF which can be used to later etch away the oxide sacrificial layer for releasing the MEMS device." In other words, instead of suggesting its use, Barron explicitly teaches away from depositing polysilicon on the oxide layer. Accordingly, claim 1 is allowable over the cited art. Dependent claims 3-8 also are allowable for the same reasons. Claims 15-19 also are allowable for the same reasons.

The application thus is in condition for allowance and such action is earnestly solicited. Applicant requests that the examiner contact applicant's attorney, Steven Saunders, if he has any questions.

Respectfully submitted,

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